

What is Claimed:

1. A method for determining a location of a vehicle in a controlled area, comprising:  
  
receiving RFID tag information from a first RFID interrogator mounted on the vehicle;  
  
receiving RFID tag information from a second RFID interrogator mounted on the vehicle; and  
  
determining the location of the vehicle using the received RFID tag information.
2. The method of claim 1, wherein the information received from each of the RFID interrogators comprises information received from a plurality of RFID tags.
3. The method of claim 2, wherein the RFID tag information comprises a unique identifier for each of the plurality of RFID tags.
4. The method of claim 3, wherein determining the location comprises mapping the unique identifiers to stored coordinates.
5. The method of claim 1, wherein determining the location comprises determining a present location for the vehicle based on the information received from the first RFID interrogator.
6. The method of claim 5, wherein the present location of the vehicle is used to track the location of an item being transported by the vehicle.

7. The method of claim 1, further comprising determining a direction of the vehicle based on the information received from both of the RFID interrogators.

8. The method of claim 7, wherein determining the direction further comprises determining a present location for both of the RFID interrogators and comparing it with a stored last location for both of the interrogators.

9. The method of claim 7, further comprises determining a directional angle based on the information received from both of the RFID interrogators and increasing the accuracy of the determined direction using the determined directional angle.

10. The method of claim 1, further comprising storing the received information along with a time stamp, and using the stored time stamps to determine a speed of the vehicle.

11. The method of claim 1, further comprising detecting an event and updating a location for an item being transported by the vehicle in response to the detected event and based on the information received from the RFID interrogators.

12. The method of claim 1, further comprising transmitting a request for information to the vehicle, wherein the information received by the RFID interrogators is received in response to the transmitted request.

13. A vehicle configured to transport an item within a controlled area, the vehicle comprising:

a first RFID interrogator configured to receive information from a plurality RFID tags installed in the controlled area:

a second RFID interrogator configured to receive information from the plurality of RFID tags, the first and second RFID interrogators separated by a distance that is related to the distance between each of the plurality of RFID tags.

14. The vehicle of claim 14, further comprising a wireless communication device coupled with the first and second RFID interrogators, the wireless communication device configured to receive RFID tag information from the first and second RFID interrogators and to transmit the received RFID tag information over a wireless communication link.

15. The vehicle of claim 14, wherein the wireless communication device is further configured to receive a request for information over the wireless communication link.

16. The vehicle of claim 15, wherein the wireless communication device is further configured to receive RFID tag information from the first and second RFID interrogators in response to the received request to for information and to transmit the received RFID tag information over the wireless communication link.

17. The vehicle of claim 15, further comprising a sensor coupled with the wireless communication device, the sensor configured to sense the occurrence of an event and communicate the occurrence of the event to the wireless communication device, the wireless communication device further configured to transmit the occurrence of the event over the wireless communication link.

18. A location authority configured to track the location of items within a controlled area, the location authority comprising:

a communication interface configured to receive RFID tag information from a first and second RFID interrogator mounted on a vehicle transporting the item; and

a processing unit configured to determine the location of the vehicle using the received RFID tag information.

19. The location authority of claim 18, wherein the RFID tag information comprises a unique identifier for each of a plurality of RFID tags.

20. The location authority of claim 19, wherein the processing unit is configured to determine the location by mapping the unique identifiers to stored coordinates.

21. The location authority of claim 18, wherein the processing unit is further configured to determine a present location for the vehicle based on the information received from the first RFID interrogator.

22. The location authority of claim 21, wherein the processing unit is further configured to use the present location of the vehicle to track the location of an item being transported by the vehicle.

23. The location authority of claim 18, wherein the processing unit is further configured to determine a direction of the vehicle based on the information received from both of the RFID interrogators.

24. The location authority of claim 23, wherein determining the direction further comprises determining a present location for both of the RFID interrogators and comparing it with a stored last location for both of the interrogators.

25. The location authority of claim 23, wherein the processing unit is further configured to determine a directional angle based on the information received from both of the RFID interrogators and to use the directional angle to increase the accuracy of the determined direction.

26. The location authority of claim 18, wherein the processing unit is further configured to associate a time stamp with the received RFID tag information and to store the received information along with the time stamp.

27. The location authority of claim 26, wherein the processing unit is further configured to use the stored time stamps to determine a speed of the vehicle.

28. The location authority of claim 18, wherein the communication interface is further configured to receive event information, and wherein the processing unit is further configured to update a location for an item being transported by the vehicle in response to the detected event and based on the information received from the RFID interrogators.

29. The location authority of claim 18, wherein the processing unit is further configured to generate a request for information and to transmit the request through the communication interface to the vehicle, and wherein the information received from the RFID interrogators is received in response to the transmitted request.

30. A system for determining the location of an item within a controlled area, the system comprising:

a plurality of RFID tags;

a vehicle configured to transport the item, the vehicle comprising:

a first RFID interrogator configured to receive information from the plurality RFID tags,

a second RFID interrogator configured to receive information from the plurality of RFID tags; and

a location authority configured to track the location the item, the location authority comprising:

a communication interface configured to receive RFID tag information from the first and second RFID interrogators, and

a processing unit configured to determine the location of the vehicle using the received RFID tag information.

31. The system of claim 30, wherein the first and second RFID interrogators separated by a distance that is related to the distance between each of the plurality of RFID tags.

32. The system of claim 30, wherein the vehicle further comprises a wireless communication device coupled with the first and second RFID interrogators, the wireless communication device configured to receive RFID tag information from the first and second RFID interrogators and to transmit the received RFID tag information over a wireless communication link to the location authority.

33. The system of claim 32, further comprising a second wireless communication device coupled with the server via the communication interface, the second wireless communication device configured to receive the RFID tag information over the wireless communication link.

34. The system of claim 33, wherein the wireless communication device is further configured to receive a request for information from the server over the wireless communication link.

35. The system of claim 34, wherein the wireless communication device is further configured to receive RFID tag information from the first and second RFID interrogators in response to the received request to for

information and to transmit the received RFID tag information over the wireless communication link to the server.

36. The system of claim 32, wherein the vehicle further comprises a sensor coupled with the wireless communication device, the sensor configured to sense the occurrence of an event and communicate the occurrence of the event to the wireless communication device, the wireless communication device further configured to transmit the occurrence of the event over the wireless communication link to the server.

37. The system of claim 30, wherein the RFID tag information comprises a unique identifier for each of a plurality of RFID tags.

38. The system of claim 37 further comprising a database configured to store coordinates for each of the plurality of RFID tags, and wherein the processing unit is configured to determine the location of the vehicle by mapping the unique identifiers to the stored coordinates.

39. The system of claim 30, wherein the processing unit is further configured to determine a present location for the vehicle based on the information received from the first RFID interrogator.

40. The system of claim 39, wherein the processing unit is further configured to use the present location of the vehicle to track the location of the item being transported by the vehicle.



41. The system of claim 30, wherein the processing unit is further configured to determine a direction of the vehicle based on the information received from both of the RFID interrogators.

42. The system of claim 41, further comprising a database configured to store information related to the location of the vehicle as determined by the processing unit, and wherein determining the direction further comprises determining a present location for both of the RFID interrogators and comparing it with a stored last location for both of the interrogators.

43. The system of claim 41, wherein the processing unit is further configured to determine a directional angle based on the information received from both of the RFID interrogators and to use the directional angle to increase the accuracy of the determined direction.

44. The system of claim 30, further comprising a database, wherein the processing unit is further configured to associate a time stamp with the received RFID tag information and to store the received information along with the time stamp in the database.

45. The system of claim 44, wherein the processing unit is further configured to use the stored time stamps to determine a speed of the vehicle.

46. The system of claim 30, wherein the communication interface is further configured to receive event information from the vehicle, and wherein

the processing unit is further configured to update a location for the item being transported by the vehicle in response to the detected event and based on the information received from the RFID interrogators.

47. The system of claim 30, wherein the processing unit is further configured to generate a request for information and to transmit the request through the communication interface to the vehicle, and wherein the information received from the RFID interrogators is received in response to the transmitted request.